Washington Aqueduct

Annual Report

On Water Quality

May 2001

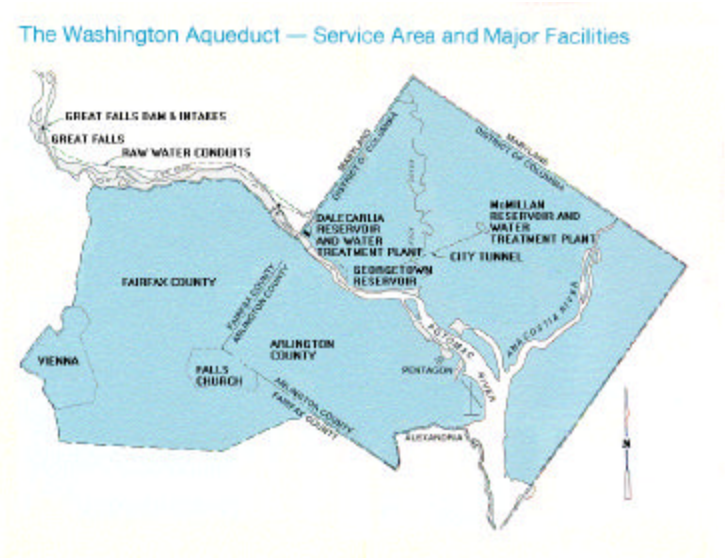
Improved Water for the New Millennium

Our Job is to Ensure the Quality of Your Drinking Water

This is Washington Aqueduct's third annual report on water quality. We are pleased to give you results of testing done through 2000. In this report, you will also learn about changes we're making at the treatment plants that improve the quality of the water you use.

What's the Source of Your Drinking Water?

If you are a retail customer of the District of Columbia Water and Sewer Authority, Arlington County or the City of Falls Church, your water is processed at one of the two Washington Aqueduct treatment plants. These plants use water from the Potomac River and are known as the Dalecarlia plant on MacArthur Boulevard adjacent to Sibley Hospital and the McMillan plant on 1st Street NW adjacent to Howard University. A service area map is shown below.



Who Sets Water Quality Standards?

The U.S. Environmental Protection Agency prescribes regulations that set the maximum limits of certain contaminants that may be present in drinking water produced by public water systems. This is done in a public process incorporating scientists and health professionals. The Washington Aqueduct monitors both the source water and its finished water to ensure that these standards are met.

How do we treat the water?

Water treatment is a physical and a chemical process used to make water safe to drink. Coagulants are added to the water that then passes slowly through large settling tanks where the larger particles settle out. The very fine particles are removed in filters that use sand and anthracite as the filter media. The water is disinfected using chlorine. We also add lime to make the water less likely to leach lead or copper from pipes. Fluoride is added to protect teeth. Carbon and algicide are used in the treatment process as required to eliminate odors and produce pleasant tasting water.

Checking for Filter Effectiveness

2000 FILTERED WATER TEST RESULTS						
Turbidity	MCLG	MCL	Average	Minimum	Maximum	Likely Source in Drinking Water
	TT (NTU)	TT (NTU)	0.1	0.1	0.1	Soil runoff.

Turbidity levels are measured at the conclusion of filtration and before disinfection. By regulation, 95 percent of samples taken each month must be below 0.5 NTU. No individual reading shall exceed 5.0 NTU. At Washington Aqueduct, each of the 46 filters is continually monitored for turbidity.

Checking the Finished Water

2000 FINISHED WATER TEST RESULTS						
Component	Dalecarlia and McMillan Water Treatment Plants					
	MCLG	MCL	Average	Minimum	Maximum	Likely Source in Drinking Water
Barium (ppm)	2	2	.04	.03	.04	Erosion of natural deposits.
Chromium (ppb)	100	100	1.4	<1.0	3	Erosion of natural deposits.
Fluoride (ppm)	4	4	0.9	0.7	0.9	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen) (ppm)	10	10	1.6	1.1	2.2	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
Alpha Emitters (pCi/L) (natural)	0	15	<1.5	<1.1	<1.7	Erosion of natural deposits.
Beta Emitters (pCi/L) (man-made)	0	50	<3.2	2.6	<3.8	Decay of natural and man-made deposits.
Atrazine (ppb)	3	3	<0.2	<0.1	0.3	Runoff from herbicides.
2,4-D (ppb)	70	70	<0.1	<0.1	0.3	Runoff from herbicides.
Selenium (ppb)	50	50	<1.0	<1.0	1.0	Erosion of natural deposits.
Simazine (ppb)	4	4	<.07	<.07	<.1	Runoff from herbicides.
Nickel (ppb)	N/A	NA	<1.0	<1.0	1.0	Discharge from metal and chemical production.

Testing and Treatment

When you are responsible for the water that more than one million people drink, including your own families and neighbors, only the best will do. That is why we are committed to ensuring that every gallon of water produced by the Washington Aqueduct can be used with complete confidence. That is also why we pleased to report that water provided by the Washington Aqueduct during 2000 was as good or better than federal standards for drinking water.

Our highly trained and dedicated staff of water quality professionals works everyday to ensure that the quality of your water is unsurpassed. In fact, we monitor our water more extensively than regulations require. During 2000, we analyzed over 32,000 samples for more than 125 different parameters. In addition to completing the proficiency requirements mandated by the U.S. EPA, the laboratory conducts an internal quality control program. The result is analytical data in which you can have the highest degree of confidence.

We are proud to be a member of the Partnership for Safe Water that was developed jointly by the U.S. EPA, the American Water Works Association, the Association of State Drinking Water Administrators and other water industry organizations. The water companies in the Partnership agree to increase the effectiveness of their treatment facilities beyond what regulations require.

Some Definitions

Action Level (AL): The concentration of a contaminant, which if exceeded, triggers a treatment of other requirement that a water system must follow.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Nephelometric Turbidity Unit (NTU): The intensity of light scattered by suspended matter in the water. A unit of measure to determine the clarity of the water.

Turbidity: A measure of the clarity of water. Turbidity is measured in nephelometric turbidity units (NTU). Turbidity in excess of 5.0 NTU is noticeable to the naked eye as cloudiness in the water. Turbidity has no specific health effects. However, it can be a medium for microbial growth and interfere with disinfection of the water. It is a good indicator of the effectiveness of a water treatment system.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Key to Units of Measurement Used in Charts

N/A (Not applicable): There is no regulatory limit.

pCi/L (Picocuries per liter): A measure of radioactivity.

ppm (Part per million): Equivalent to one penny in $10,000.00.

ppb (Part per billion): Equivalent to one penny in $10,000,000.00.

What are we doing to make the water safer?

On November 1, 2000, we switched to the use of chloramine as a secondary disinfectant at both treatment plants. We can now ensure that a total chlorine residual protects the water in the distribution system until you use it, while at the same time reducing the formation of regulated byproducts of disinfection. New EPA regulations will lower the allowable concentration of trihalomethanes and haloacetic acids. Our treatment change will ensure Washington Aqueduct fully meets the new standard. As an added benefit, the water tastes better.

What Might Be In the Source Water?

As water travels over the surface of the land or through the ground, it can dissolve naturally occurring minerals and pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in the Potomac River include:

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, may be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas promotion, mining or farming.

Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals which are by-products of industrial processes and petroleum production, may come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants may come from naturally occurring deposits or be the result of oil and gas production and mining activities.

Arsenic

You may have heard discussion about arsenic and drinking water and the EPA's plan to set a new lower standard.

The water produced by Washington Aqueduct and delivered to its customers does not contain any measurable trace of arsenic.

The EPA standards will apply to finished water, so lowering the standard from 50 parts per billion to 10 parts per billion will have no practical effect on our operations. Our regular monitoring of our source water has indicated a seasonal high of 2 parts per billion of arsenic with the majority of the results less than detectable. After the treatment process, even that small amount is removed.

The ongoing cleanup in Spring Valley in Washington, DC for arsenic in the soil as a residue from the World War I weapons laboratory is not connected with the water supply. Any runoff from that area is not able to enter the Dalecarlia Reservoir, and arsenic in the soil would not be able to enter the pressurized water pipes going to homes and businesses.

Cryptosporidium

Cryptosporidium Parvum is a single cell organism that lives and reproduces within the intestine of animal hosts. These cysts are expelled in the feces. People can be exposed to the Cryptosporidium oocysts from other people, animals, soils, drinking water, swimming pools and food as well as any surface not sanitized after exposure to feces. Symptoms may range from mild diarrhea to incapacity diarrhea, camps, loss of appetite, weight loss, nausea, and low grade fever. Because reliable tests are not available for low levels of concentration, EPA does not require that finished water be tested if the *raw* water does not have concentrations that exceed 10 oocysts per liter. Washington Aqueduct tests the raw water regularly and results are substantially below that threshold. Cryptosporidium is eliminated from the water during the treatment process by effective use of the sedimentation and filtration processes.

Should I Take Special Precautions with the Drinking Water?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from **the Safe Drinking Water Hot line (800-426-4791).**

Safe Drinking Water Hot line

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hot line.
(1-800-426-4791)

Who can I call for more information?

If you have questions relating to water treatment or the source water, please call Washington Aqueduct at 202-764-0019. You may also check the Washington Aqueduct website:

http://washingtonaqueduct.nab.usace.army.mil

If you have a question relating to your retail service provider, please call:

District of Columbia
DC Water and Sewer Authority
Department of Water Services
202-612-3434

Arlington County
Department of Public Works
Water, Sewer and Streets
703-228-6578

Falls Church
Department of Environmental Services
703-248-5070